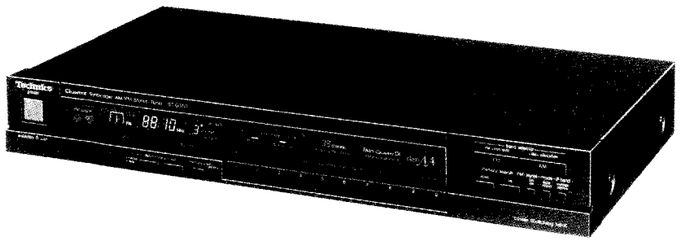
ORDER NO. AD8806160C8

Service Manual

Tuner

QUARTZ Synthesizer
AM/FM Stereo Tuner

ST-G550



Color

(K)...Black Type (S)...Silver Type

Area

Color	Area
(K) (S)	(EX).....Continental Europe.
(K) (S)	(EH).....Holland.
(K) (S)	(EG).....F.R. Germany.
(K) (S)	(Ei).....Italy.
(K) (S)	(XL).....Australia.
(K) (S)	(XA).....Asia, Latin America, Middle Near East, Africa and Oceania.

SPECIFICATIONS

(DIN 45 500)

■ FM TUNER SECTION

Frequency range	87.50～108.00 MHz 87.525～108.00 MHz (+25 kHz shift)
Sensitivity	1.5 µV (IHF, usable)
S/N 30 dB	1.3 µV (75Ω)
S/N 26 dB	1.2 µV (75Ω)
S/N 20 dB	0.9 µV (75Ω)
IHF 46 dB stereo quieting sensitivity	28 µV/75Ω
Total harmonic distortion MONO (normal)	0.015%
STEREO (normal)	0.02%
S/N MONO	72 dB (80 dB, IHF)
STEREO	65 dB (73 dB, IHF)
Frequency response	4 Hz～18 kHz, +0.5 dB～−1.5 dB
Alternate channel selectivity	
normal ±400 kHz	50 dB
super narrow ±200 kHz	25 dB
Capture ratio	1.0 dB
Image rejection at 98 MHz	100 dB
IF rejection at 98 MHz	100 dB
Spurious response rejection at 98 MHz	110 dB
AM suppression	55 dB
Stereo separation 1 kHz	60 dB
10 kHz	45 dB
Carrier leak 19 kHz	−55 dB (−60 dB, IHF)
38 kHz	−40 dB (−45 dB, IHF)
Channel balance (250 Hz～6,300 Hz)	±1.0 dB
Limiting point	0.85 µV
Bandwidth IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminals	75Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	
AM (For Europe and Australia)	522 kHz～1611 kHz (9 kHz-steps) 530 kHz～1620 kHz (10 kHz-steps)
(For others)	531 kHz～1602 kHz (9 kHz-steps) 530 kHz～1600 kHz (10 kHz-steps)
Sensitivity (S/N 20 dB) AM	20 µV, 300 µV/m
Selectivity (±9 kHz) AM (at 999 kHz)	50 dB
Image rejection AM (at 999 kHz)	40 dB
IF rejection AM (at 999 kHz)	60 dB

■ GENERAL

Output voltage	0.3 V (0.6 V IHF)
Power consumption	9 W
Power supply	
For Australia	AC 50 Hz/60 Hz, 240 V
For Continental Europe	AC 50 Hz/60 Hz, 220 V
For others	AC 50 Hz/60 Hz, 110 V/127 V/220 V/240 V
Dimensions (W × H × D)	430 × 64 × 241 mm (16-30/32″ × 2-17/32″ × 9-1/2″)
Weight	2.2 kg (4.84 lb.)

Notes:

1. Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).
2. Specifications are subject to change without notice. Weight and dimensions are approximate.

Technics

Matsushita Electric Industrial Co., Ltd.
Central P.O. Box 288, Osaka 530-91, Japan

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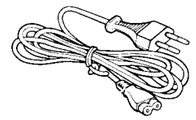
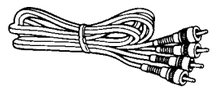
■ ACCESSORIES

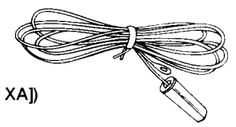
- AC power supply cord 1
  (SFDAC05E03 [EX, EH, EG, Ei])
  (SJA163 [XL])
  (SJA168-1 [XA])



- Stereo connection cable 1
  (SJP2249-1)

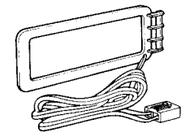


- FM indoor antenna 1
  (SSA270M [EX, EH, EG, Ei])

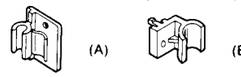


(SSA269M [XL, XA])

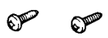
- AM loop antenna 1
  (SPB1162T)



- AM antenna holders 2
  (SMA233-1M) (SMA231M)

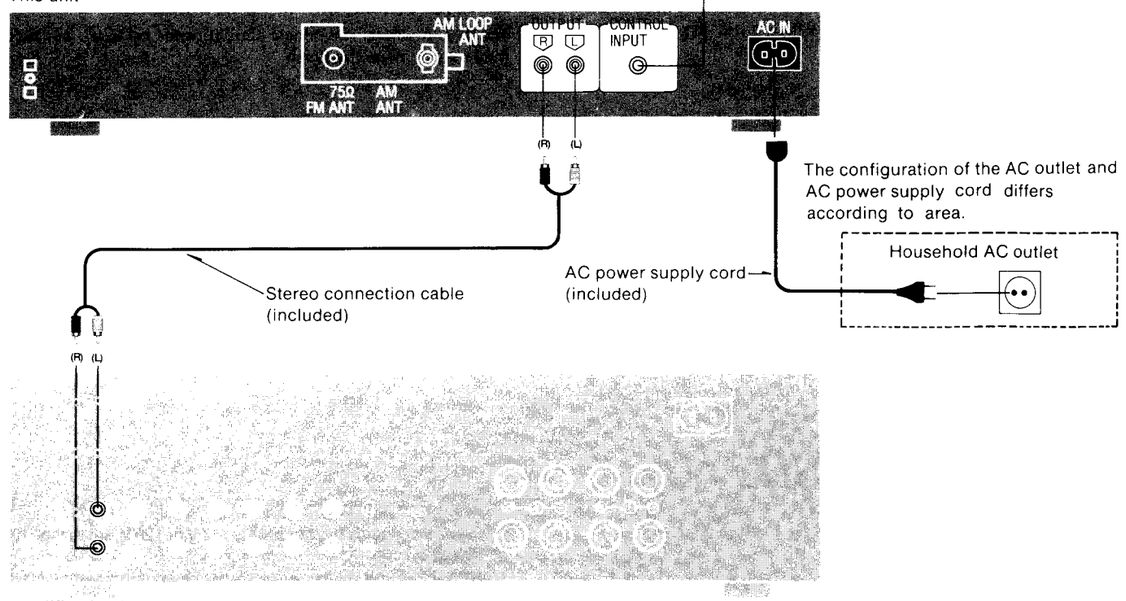


- Screws 2
  (XTN3+10AFZ)



■ CONNECTIONS

Control input terminal (CONTROL INPUT):
This terminal is used for the connection of a timer for the purpose of controlling the tuner by means of an external control signal.



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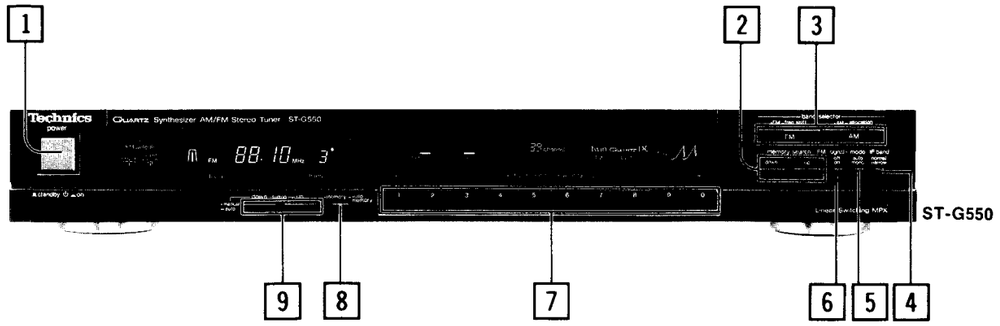
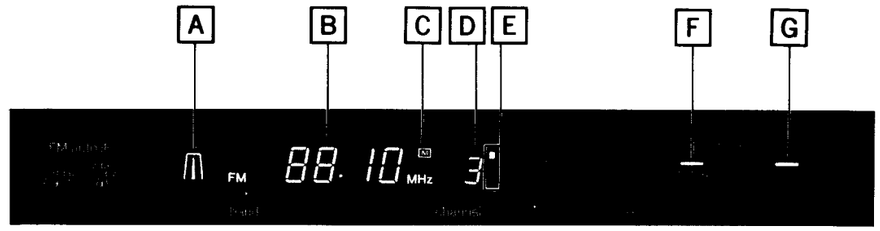
■ FRONT PANEL CONTROLS AND FUNCTION





Control section

1 Power "standby ⏻/on" switch (power "standby ⏻/on")

This switch switches ON and OFF the secondary circuit power only. The unit is in the "standby" condition when this switch is set to the "standby ⏻" position. Regardless of the switch setting, the primary circuit is always "live" as long as the power cord is connected to an electrical outlet.

2 Memory-search button (memory search)

Press this button to confirm a presetting.
If the button is pressed, the memorized frequency and "channel" number will be shown one after the other in order.

3 Band selectors (band selector)

FM:
Press this button to listen to an FM broadcast.
freq shift:
The displayed FM frequency can be shifted by +0.025 MHz (+25 kHz) in order to precisely align with the frequency of the FM broadcast station.
When the button is pressed slightly longer, the reception frequency increases by 0.025 MHz (25 kHz).
(The final figure of the frequency display changes to "2" or "7".)
In order to return to the original frequency indication, press this button for about 2 seconds again.
AM:
Press this button to listen to an AM broadcast.
allocation:
This button is also used to select a frequency step of either 9 kHz or 10 kHz.
When the AM button is pressed for about 4 seconds, the AM frequency step will change to 10 kHz per step.
(This step is set to 9 kHz before shipment.)
Set to the appropriate position for your locality.
In order to return to the original frequency indication, press this button for about 4 seconds again.

4 FM IF band selector (FM-IF band)

For selection of the FM IF band.
The built-in computer of this unit detects the signal condition and functions accordingly to select the FM IF band automatically. This button is used to change it manually.

5 FM mode selector (FM-mode)

If noise is excessive in stereo broadcasts, a switchover to monaural reception can be made.
When there is a change to monaural reception, the illumination of the FM mode indicator changes to the "mono" position.

6 FM signal-strength indication button (FM-signal)

If this button is pressed during reception of an FM broadcast, the signal strength (the strength of the signal of the broad cast being received) will be displayed within a 2 dB accuracy. If the strength of the signal being received is 50 dB/75Ω or more, a symbol (■) will appear between the number and dB to indicate that a strong signal of 50 dB/75Ω or more is being received. The signal will become saturated at 50 dB or more.

7 Preset-tuning buttons (1 ~ 0) (39 channel random preset tuning)

These buttons are used to preset FM and AM broadcast frequencies into the memory of this unit, and are also pressed to select the desired preset frequencies.

8 Memory button (memory)

This button is used when preset memory setting of the preset-tuning buttons is made.

9 Tuning buttons (tuning)

These buttons are used for tuning to the desired broadcast station.

Display section

A FM IF band indicator (FM auto IF)

normal ⎍ :
This indicator will illuminate if the signal is strong and there is little effect from interference.
super narrow ⎍ :
This indicator will illuminate if the signal is weak and/or there is interference.

B Digital frequency display

The reception frequency of the FM or AM broadcast selected by using the tuning buttons or the preset-tuning buttons is indicated.

C Memory indicator (M)

This indicator illuminates when the memory button is pressed.

D Channel display (channel)

The channel number selected by the preset-tuning buttons is displayed.

E FM mode indicator (FM mode)

When FM broadcasts are being received, usually the "auto" indication is illuminated.
When the FM mode selector is used to select monaural reception, the illumination of the FM mode indicator changes to the "mono" position.

F FM stereo indicator (FM stereo)

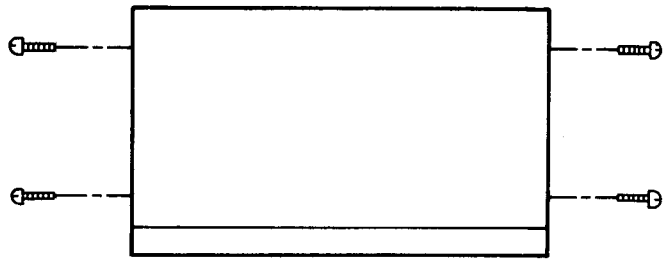
This indicator automatically illuminates when an FM stereo broadcast is being received.
Note:
It will not illuminate if the FM mode selector is set to the monaural mode.

G Quartz-lock indicator (quartz lock)

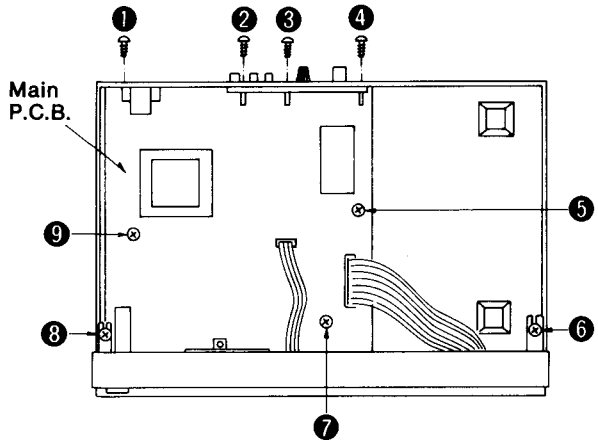
This indicator illuminates when tuned precisely to an FM or AM station.

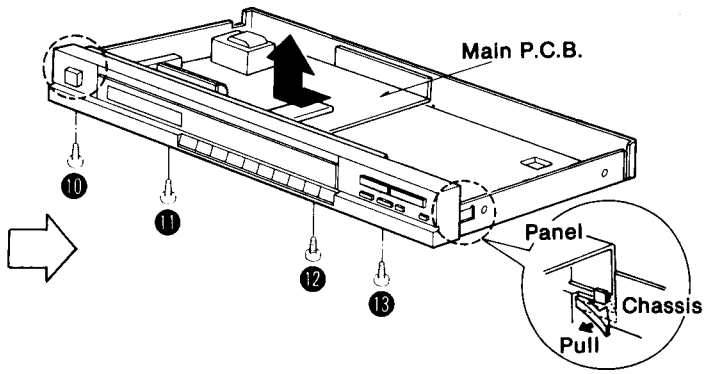
■ DISASSEMBLY INSTRUCTIONS

Ref. No. 1	How to remove the cabinet
Procedure 1	• Remove the 4 screws.

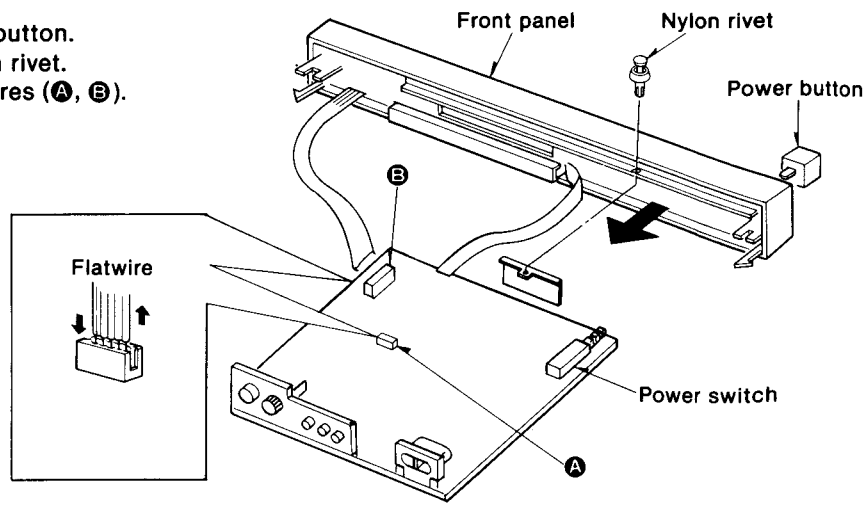


Ref. No. 2	How to remove the main P.C.B.
Procedure 1→2	• Remove the 9 screws (❶~❾). • Remove the 4 screws (❿~⓭). • Slightly pull the front panel toward you and remove the main P.C.B.





Ref. No. 3	How to remove the front panel
Procedure 1→2→3	• Remove the power button. • Remove the 1 Nylon rivet. • Remove the 2 flatwires (Ⓐ, Ⓑ).



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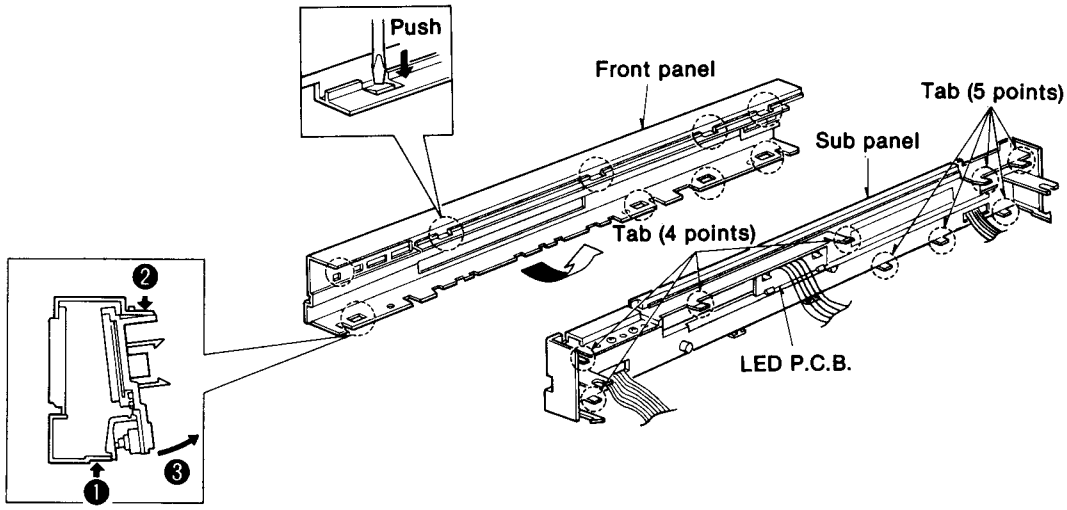
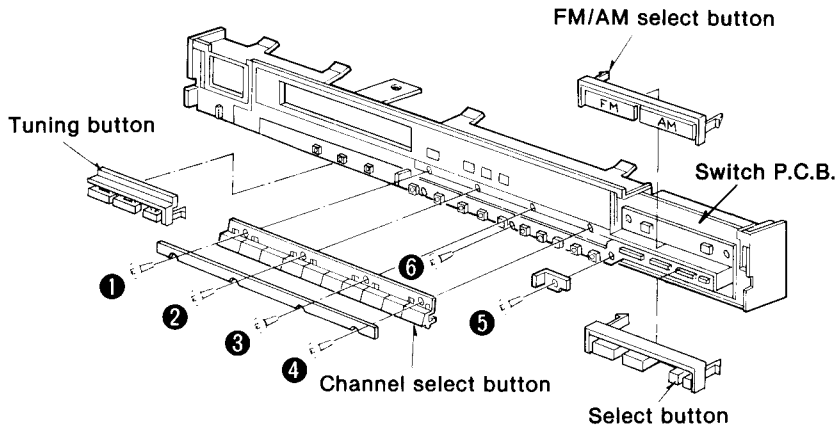
Ref. No. 4	How to remove the sub panel
Procedure 1→2→3→4	• Push out the 9 tabs on the bottom and top side of the sub panel by used minusdriver.



Ref. No. 5	How to remove the switch P.C.B.
Procedure 1→2→3→4→5	• Remove the 6 screws (❶~❻).



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■ MEASUREMENTS AND ADJUSTMENTS

■ AM/FM

Control positions and equipment used

- AM and FM signal generator(AM and FM-SG)
- Stereo modulator
- Distortion analyser
- Oscilloscope
- Frequency counter
- Choke coil (100μH)
- Resistor(100kΩ)
- Ceramic capacitor(200pF)
- AC and DC electronic voltmeter(EVM)

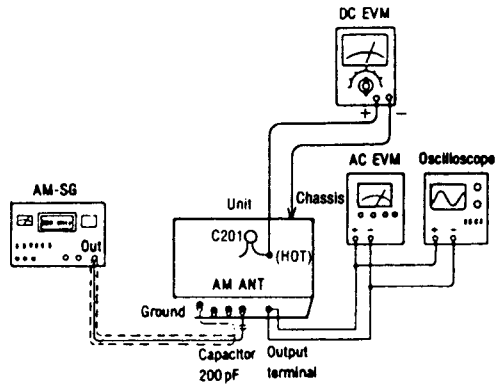
Note: For **T201** (AM-IFT), **L301** (L.P.F.), **L303** and **L304** (L.P.F.), they are supplied as adjusted parts. So, do not turn the cores of the parts.

AM-RF ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**AM**" mode.
3. Set the radio frequency display and signal generator to **612kHz**.
4. Adjust **L203** so that the voltage measured in signal mode is **1.0V**.
5. Adjust **L202** for maximum output.
6. Set the radio frequency display and signal generator to **1503kHz**.
7. Adjust **CT201** for maximum output.
8. Repeat steps 3~7.

Note: Antenna input level must be as low as possible being free from AGC.

AM SIGNAL GENERATOR CONDITION
Modulation 30%
Modulation frequency 400Hz

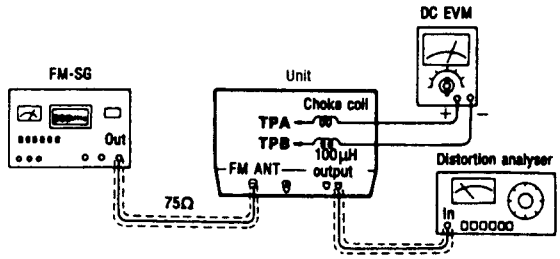


FM MONO DISTORTION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" mode.
3. Set the radio frequency display and signal generator to **100.10MHz**.
4. Adjust the core of **T101** so that the voltage measured in signal mode is **0mV(0±10mV)** in 300mV range.
5. Adjust **T102** so that the distortion factor of L-CH is minimized.
6. Repeat steps 4 and 5.
7. Make sure that the distortion factors of L-CH and R-CH are nearly the same and minimum.

Note: The adjusting screwdriver used should be made of resin.

FM SIGNAL GENERATOR CONDITION
Modulation 100%
Modulation frequency 1kHz
Output level 66dB



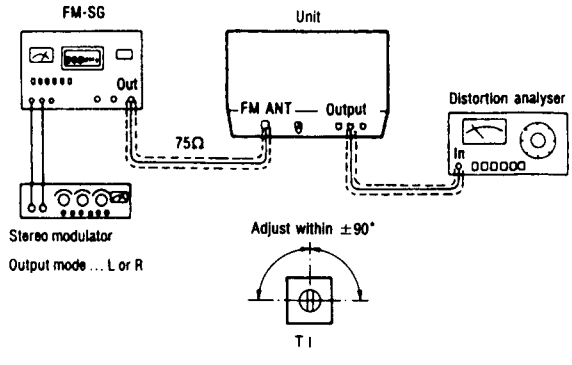
TPA=TP101, TPB=TP102

FM STEREO DISTORTION ADJUSTMENT (EG, Ei only)

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" mode.
3. Set the radio frequency display and signal generator to **100.10MHz**.
4. Adjust **T1** so that the distortion factor of L-CH is minimized.
5. Make sure that the distortion factors of L-CH and R-CH are nearly the same with each other to minimum.

Notes:
1. The adjusting screwdriver used should be made of resin.
2. **T1** should be rotated no more 1/4 turn (90 deg.) on either side.

FM SIGNAL GENERATOR CONDITION
Modulation.....Stereo "L" mode or "R" mode 45%, Pilot 10%
Modulation frequency.....1kHz (Pilot 19kHz)
Output level.....66dB



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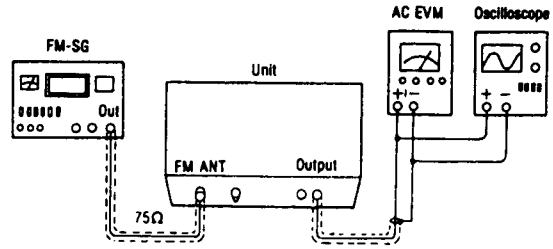
38kHz CANCEL CIRCUIT ADJUSTMENT (Except [EG, El])

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM**" position.
3. Set the radio frequency display and signal generator to **100.10MHz.**
4. Adjust **VR303** so that the output is minimized.

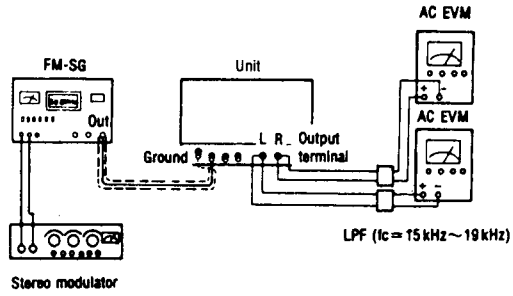
FM SIGNAL GENERATOR CONDITION
Modulation.....Stereo "L+R" mode 0%, Pilot 10%
Modulation frequency.....1kHz (Pilot 19kHz)
Output level.....66dB



SEPARATION ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM and IF normal**" mode.
3. Set the radio frequency display and signal generator to **100.10MHz.**
4. Adjust **VR301** so that the R-CH output is minimized when stereo modulator is in "L"(L-CH modulation) mode.

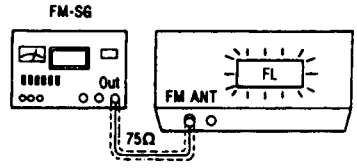
FM SIGNAL GENERATOR CONDITION
Modulation.....Stereo "L" mode or "R" mode 45%, Pilot 10%
Modulation frequency.....1kHz (Pilot 19kHz)
Output level.....66dB



FM SIGNAL STRENGTH LEVEL ADJUSTMENT

1. Test equipment connection is shown in figure.
2. Set the unit to "**FM and IF normal**" mode.
3. Set the radio frequency display and signal generator to **100.10MHz.**
4. Change FL display from "frequency" to "dB" by pressing the FM signal button.
5. Adjust **VR101** so that **54dB** is indicated. "**54dB**" is indicated on the FL display.
6. Repeat steps 4, 5.

FM SIGNAL GENERATOR CONDITION
Modulation 30%
Modulation frequency.....1kHz
Output level.....60dB



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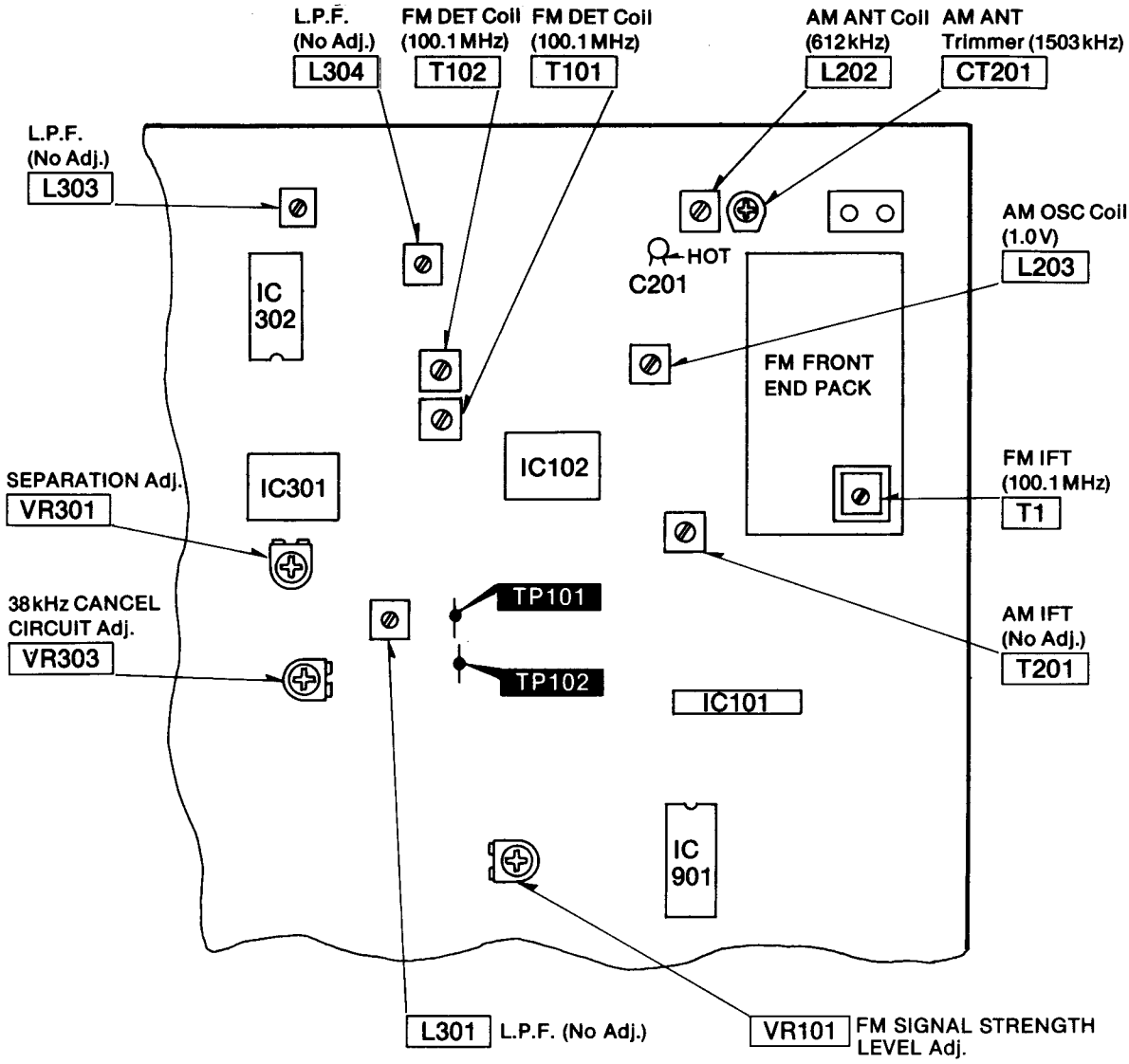
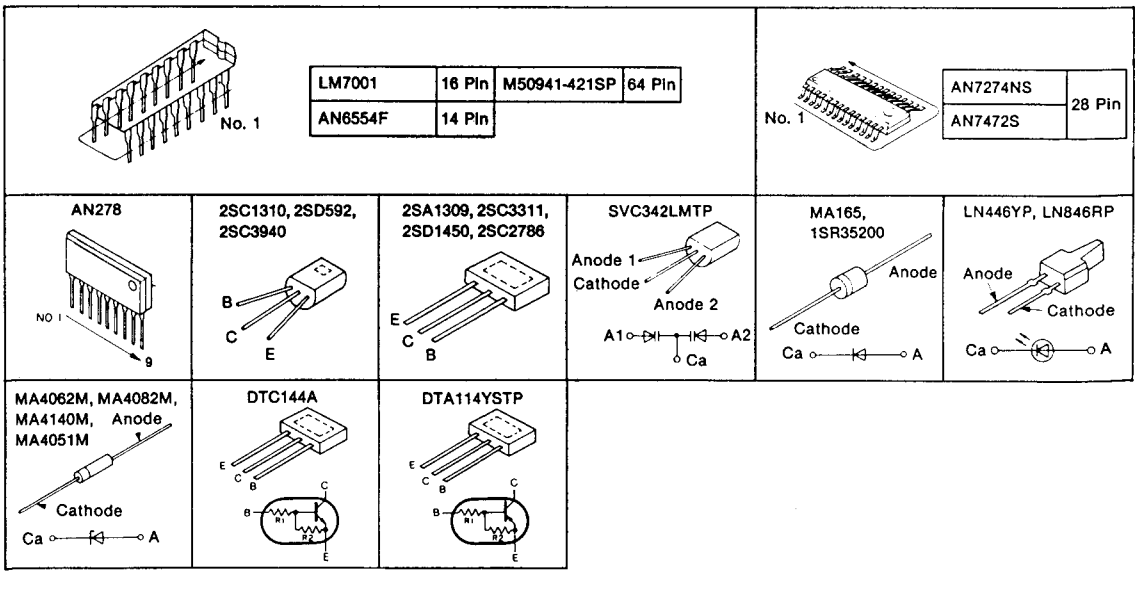
• **Adjustment points**



■ TERMINAL GUIDE OF IC'S, TRANSISTORS AND DIODES



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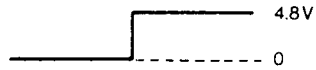
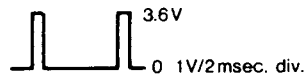
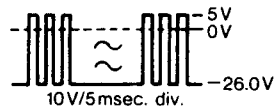
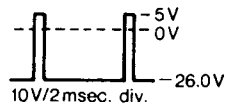
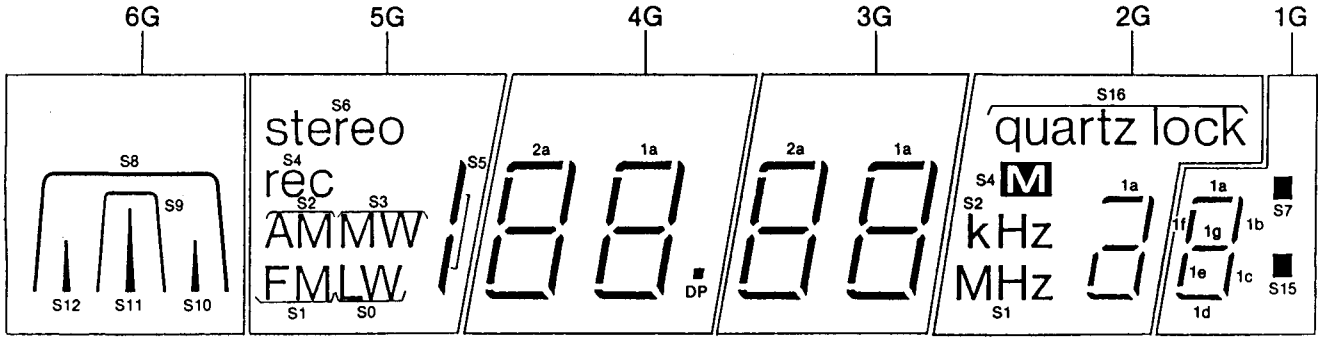
■ FUNCTION OF TERMINAL (IC902: M50941-421SP)

PIN NO.	IN/OUT	MARK	DESCRIPTION OF TERMINAL
1	INPUT	VREF	Reference voltage terminal.
2	———	NC	Not used in this unit.
3	———	A	Not used in this unit, connected to GND.
4		B	
5 • 6	———	SSL1 • SSL2	
7	INPUT	SSL3	FM signal level detector terminal.
8	INPUT	SD	Station detection of auto tuning terminal. • Received: "H", No signal: "L"
9	INPUT	STEREO	Reference voltage terminal.
10 • 17	———	TUNING 0 • TUNING 1	Not used in this unit.
11	———	RF BAND	Not used in this unit.
12	OUTPUT	IF BAND	FM IF BAND selector terminal. • "normal": "L", "super narrow": "H"
13	———	NC	Not used in this unit.
14	———	REC	Not used in this unit.
15	OUTPUT	MONO	Forcible monaural selection terminal.  Forcible monaural mode
16	OUTPUT	MUTE	Terminal to eliminate shock noise due to unlocking at PLL. 〈Muting output〉 • Pin 25 (CE) is "L"→"H" or "H"→"L" • Power switch "off". • Frequency change. (up/down, FM↔AM (MW/LW), REC). • FM RF/IF selection.
18	OUTPUT	$\overline{\text{SRDY}}$	PLL data output terminal. $\overline{\text{SRDY}}$: serial I/O enable signal, CLK: clock signal, SOUT: serial data signal.
19		CLK	
20		SOUT	
21	INPUT	SIN	Control input terminal.
22	OUTPUT	T1	Clock pulse waveform output terminal. • FM: 1kHz signal (duty 50%)
23	———	T2	Not used in this unit.

PIN NO.	IN/OUT	MARK	DESCRIPTION OF TERMINAL
24	INPUT	$\overline{INT1}$	Remote control input terminal. Not used in this unit.
25	INPUT	$\overline{INT2}$	Power supply detection terminal.
26 • 32	———	Vss	Ground terminal.
27	INPUT	RESET	Reset signal terminal.
28	INPUT	XIN	Connecting terminal for crystal oscillator.
29	OUTPUT	XOUT	
30	———	XCIN	Not used in this unit, connected to GND.
31	———	XCOUT	Not used in this unit.
33	———	NC	
34 ⟆ 37	INPUT	R0 ⟆ R3	Terminal for key return signal to external key matrix. 
38	INPUT	VP	Power supply terminal for FL display.
39 ⟆ 54	OUTPUT	S0 ⟆ S15	Segment signal terminal for FL display. 
55	———	NC	Not used in this unit.
56 ⟆ 62	OUTPUT	T1 ⟆ T7	Terminal for key scan signal to external key matrix and grid signal terminal for FL display. 
63	INPUT	AVcc	Power supply terminal of device.
64	INPUT	Vcc	

■ DESCRIPTION OF FL PANEL

• GRID ASSIGNMENT



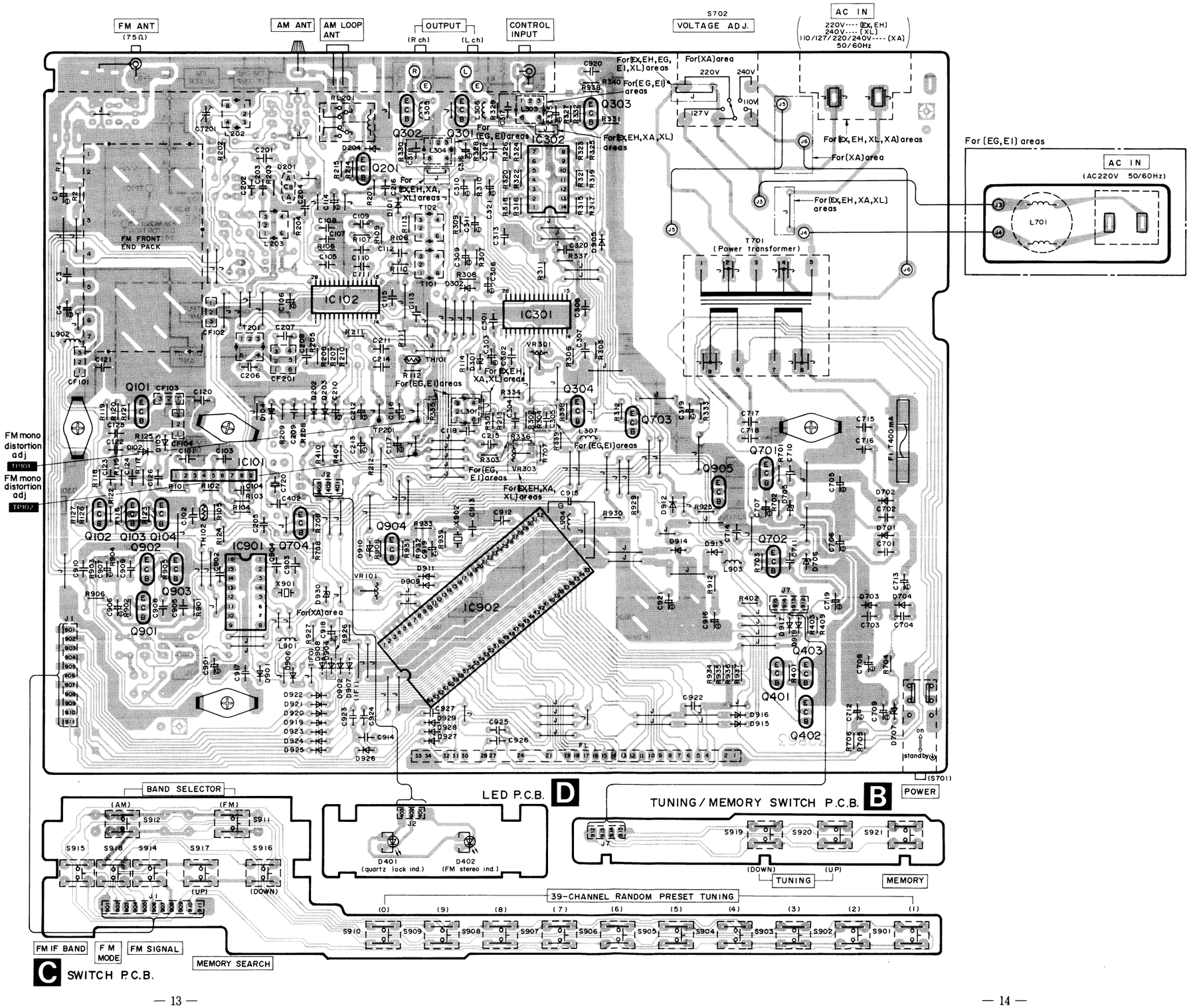
• PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
CONNECTION	F 1	F 1	N P	S 8	S 9	6 G	S 10	S 11	S 12	S 13	5 G	S 14	S 15	4 G	S 0	S 1	S 2	S 3	S 4	N P	3 G	N P	N P	S 5	N P	N P	S 6	2 G	N P	S 16	S 7	1 G	N P	F 2	F 2

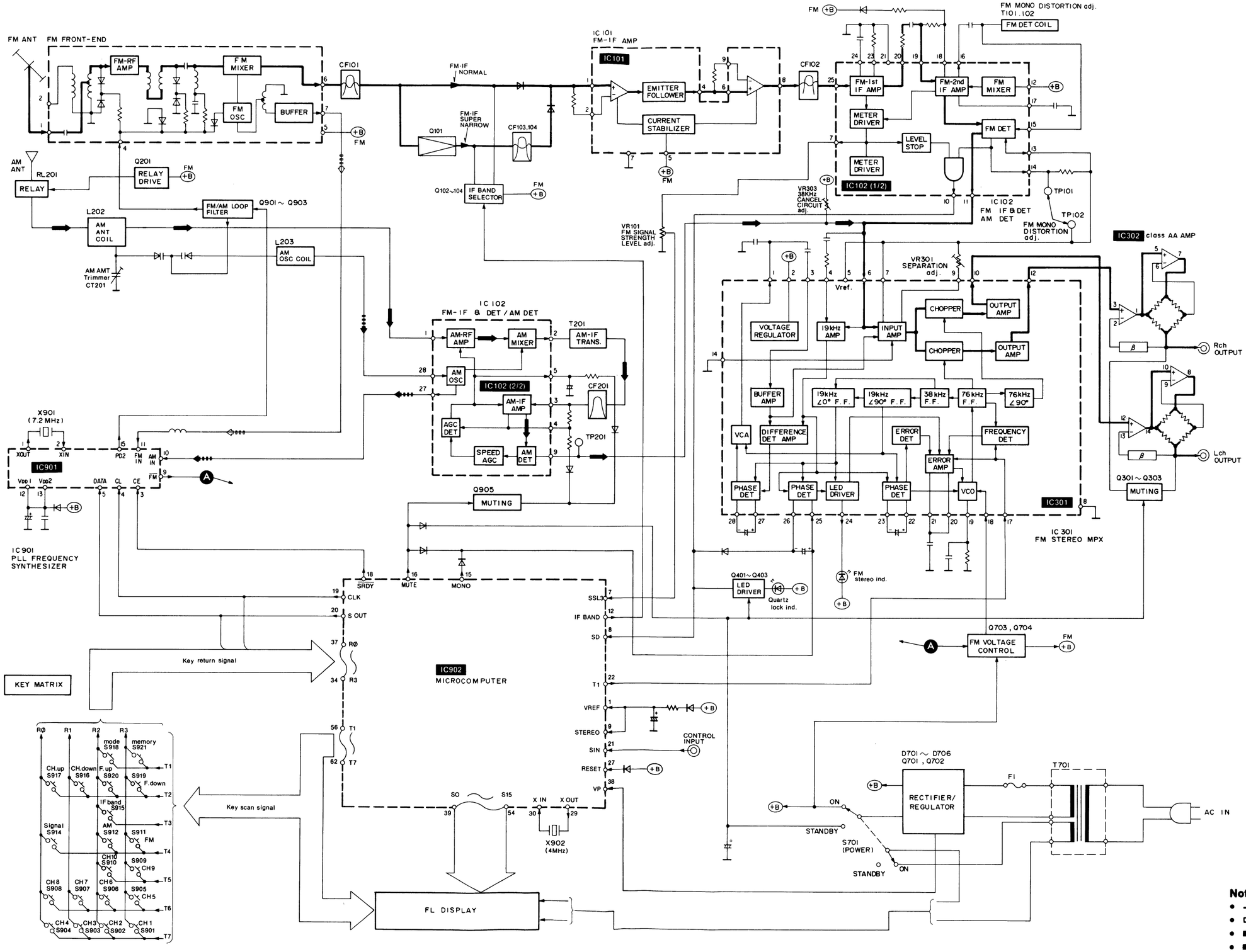
• ANODE CONNECTION

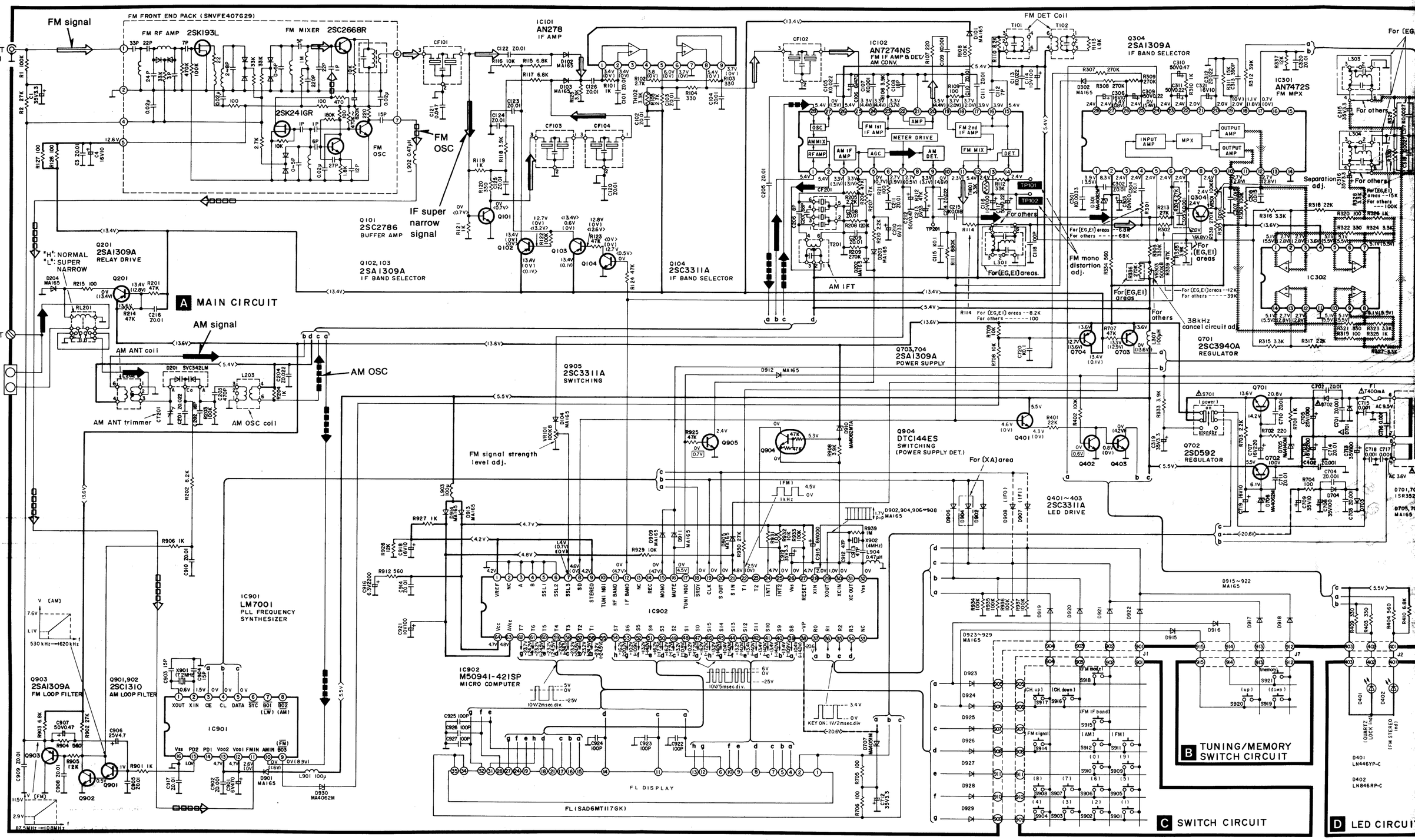
	6G	5G	4G	3G	2G	1G
S0	-	LW	2d	2d	-	-
S1	-	FM	2e	2e	MHz	-
S2	-	AM	2c	2c	kHz	-
S3	-	MW	2g	2g	-	-
S4	-	rec	2f	2f	M	-
S5	-	/	2b	2b	-	-
S6	-	stereo	2a	2a	-	-
S7	-	-	-	-	-	■
S8	⌜¯⌝	-	1d	1d	1d	1d
S9	⌜⌝	-	1e	1e	1e	1e
S10	|	-	1c	1c	1c	1c
S11	|	-	1g	1g	1g	1g
S12	|	-	1f	1f	-	1f
S13	-	-	1b	1b	1b	1b
S14	-	-	1a	1a	1a	1a
S15	-	-	DP	-	-	■
S16	-	-	-	-	quartz lock	-

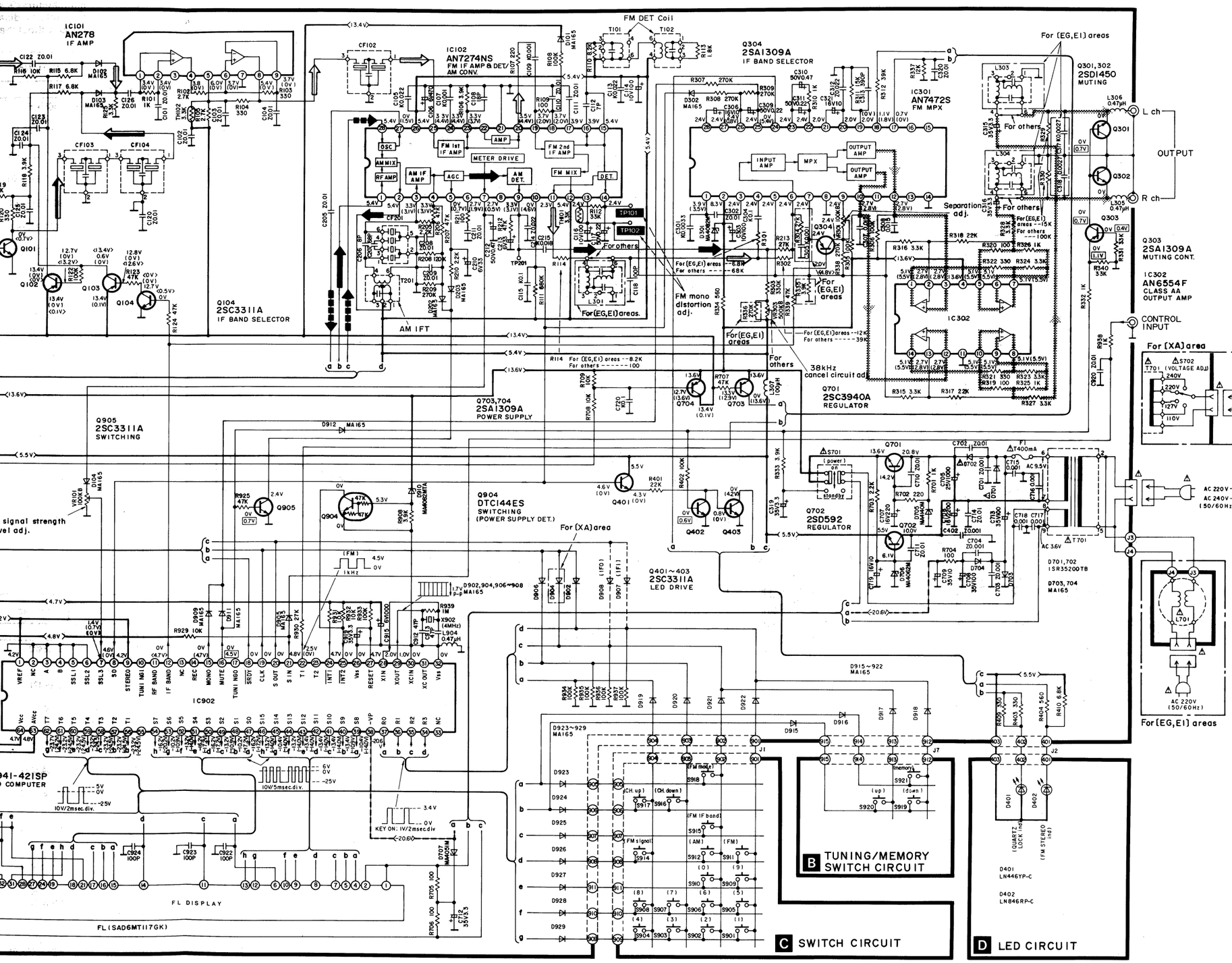
■CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM



■ BLOCK DIAGRAM




FM ANT (75Ω)
FM signal
FM FRONT END PACK (SNVFE407629)
FM RF AMP 2SK193L
FM MIXER 2SC2668R
2SK241GR
FM OSC
IC101 AN278 IF AMP
CF101
IF super narrow signal
Q101 2SC2786 BUFFER AMP
Q102, 103 2SA1309A IF BAND SELECTOR
Q104 2SC3311A IF BAND SELECTOR
FM DET Coil
IC102 AN7274NS FM IF AMP & DET/ AM CONV.
AM IFT
Q304 2SA1309A IF BAND SELECTOR
IC301 AN7472S FM MPX
Separation adj.
For others
For (EG,E) areas --15K
For others ---100K
For (EG,E) areas --6.8K
For others ---68K
For (EG,EI) areas
For others
FM mono distortion adj.
38kHz cancel circuit adj.
IC302
Q701 2SC3940A REGULATOR
Q703,704 2SA1309A POWER SUPPLY
A MAIN CIRCUIT
"H": NORMAL
"L": SUPER NARROW
Q201 2SA1309A RELAY DRIVE
AM signal
AM ANT
AM LOOP ANT
AM ANT coil
AM ANT trimmer
AM OSC coil
AM OSC
Q905 2SC3311A SWITCHING
FM signal strength level adj.
Q904 DTC144ES SWITCHING (POWER SUPPLY DET.)
For (XA) area
Q401~403 2SC3311A LED DRIVE
Q702 2SD592 REGULATOR
IC901 LM7001 PLL FREQUENCY SYNTHESIZER
530kHz—1620kHz
Q903 2SA1309A FM LOOP FILTER
Q901,902 2SC1310 AM LOOP FILTER
IC902 M50941-421SP MICRO COMPUTER
FL DISPLAY
FL(SAD6MT117GK)
D915~922 MA165
D923~929 MA165
B TUNING/MEMORY SWITCH CIRCUIT
C SWITCH CIRCUIT
D LED CIRCUIT



■SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)

Note 1:

- **S701** : Power switch in "ON" position.
- **S702** : Voltage selector. (For [XA] area.)
- **S901~S910** : Preset tuning switch.
  (S901: CH1, S902: CH2, S903: CH3, S904: CH4, S905: CH5, S906: CH6, S907: CH7, S908: CH8, S909: CH9, S910: CH0
- **S911, S912** : Band selectors.
  S911: FM, S912: AM
- **S914** : FM signal-strength switch.
- **S915** : FM IF band selector. (normal ↔ narrow)
- **S916, S917** : Memory-search switches.
  S916: down, S917: up
- **S918** : FM mode selector. (auto ↔ mono)
- **S919, S920** : Tuning switches.
  S919: down, S920: up
- **S921** : Memory switch.
- Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
  All voltage values shown in circuitry are DC voltage in FM signal (no signal) reception modes.
  * Figures in ( ) stand for DC voltage in AM signal reception mode.
  * Figures in 〈 〉 stand for IF band "super narrow" mode.
  * Figures in ▭ stand for muting mode.

Positive voltage lines
FM OSC
AM OSC
AF signal lines
FM signal
AM signal
IF super narrow signal

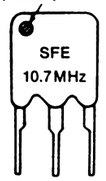
- Important safety notice.
  Components identified by ⚠ mark have special characteristics important for safety.
  When replacing any of these components, use only manufacturer's specified parts.

Note 2:

- **Use of ceramic filters in pairs**

The ceramic filters (CF101~CF104) for FM-IF circuit are available in three versions For this circuit, be sure to use the ceramics of the same version in a pair.
At repairing and replacement, pay close attention to the diodes (D907, D908) for use as different diodes must be used depending on each version of the ceramic filters.

Color marking
(Red, Black, Blue or Orange)



VERSION (Color)	D907	D908
Red	×	×
Black	○	×
Blue	×	○
Orange	○	○

Note: ○ mark: Diode is used.
× mark: Diode is not used.

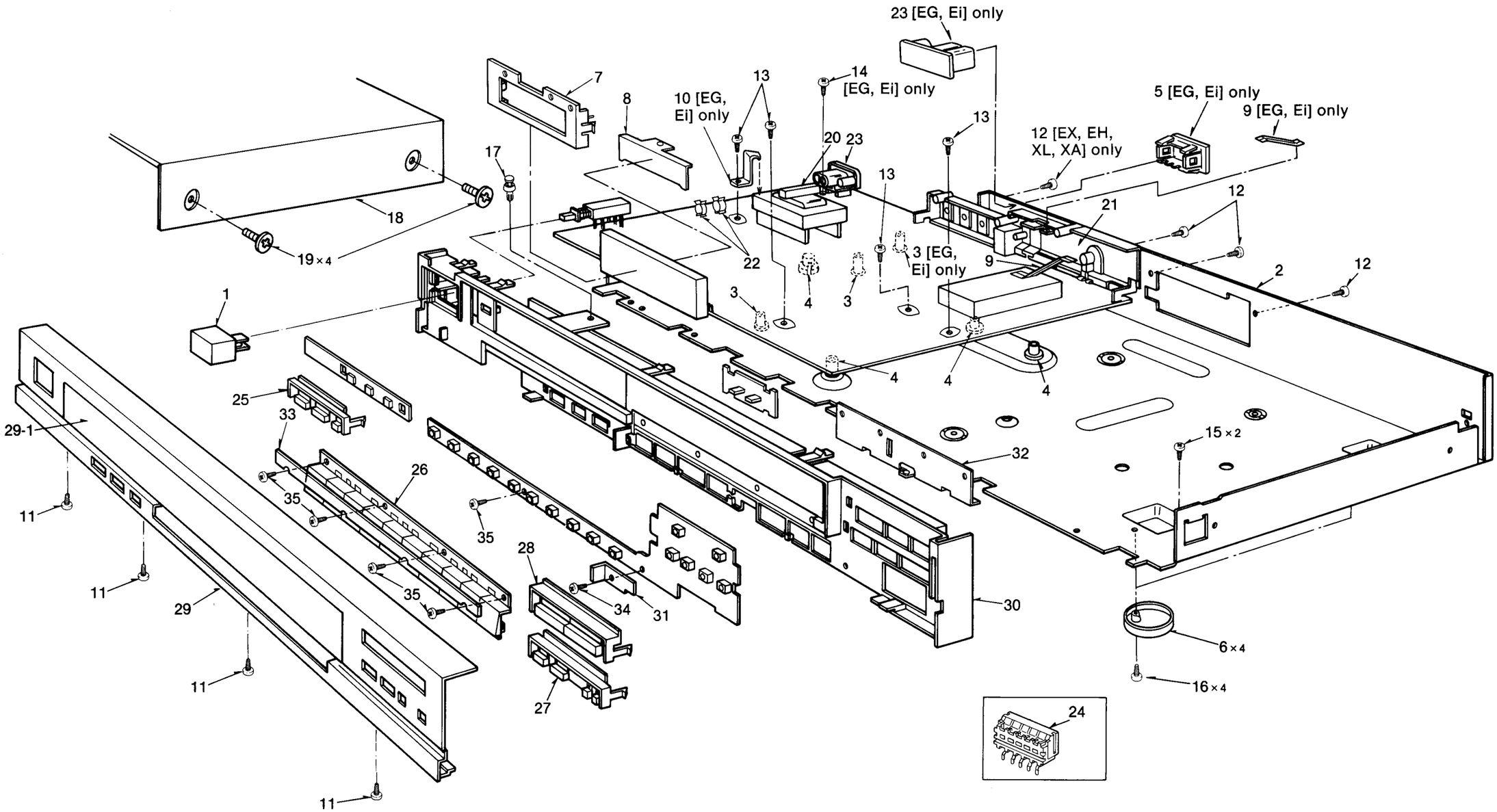
∗ Caution!

IC and LSI are sensitive to static electricity.
Secondary trouble can be prevented by taking care during repair.

- Cover the parts boxes made of plastics with aluminum foil.
- Ground the soldering iron.
- Put a conductive mat on the work table.
- Do not touch the legs of IC or LSI with the fingers directly.

ST-G550 ST-G550

EXPLODED VIEW

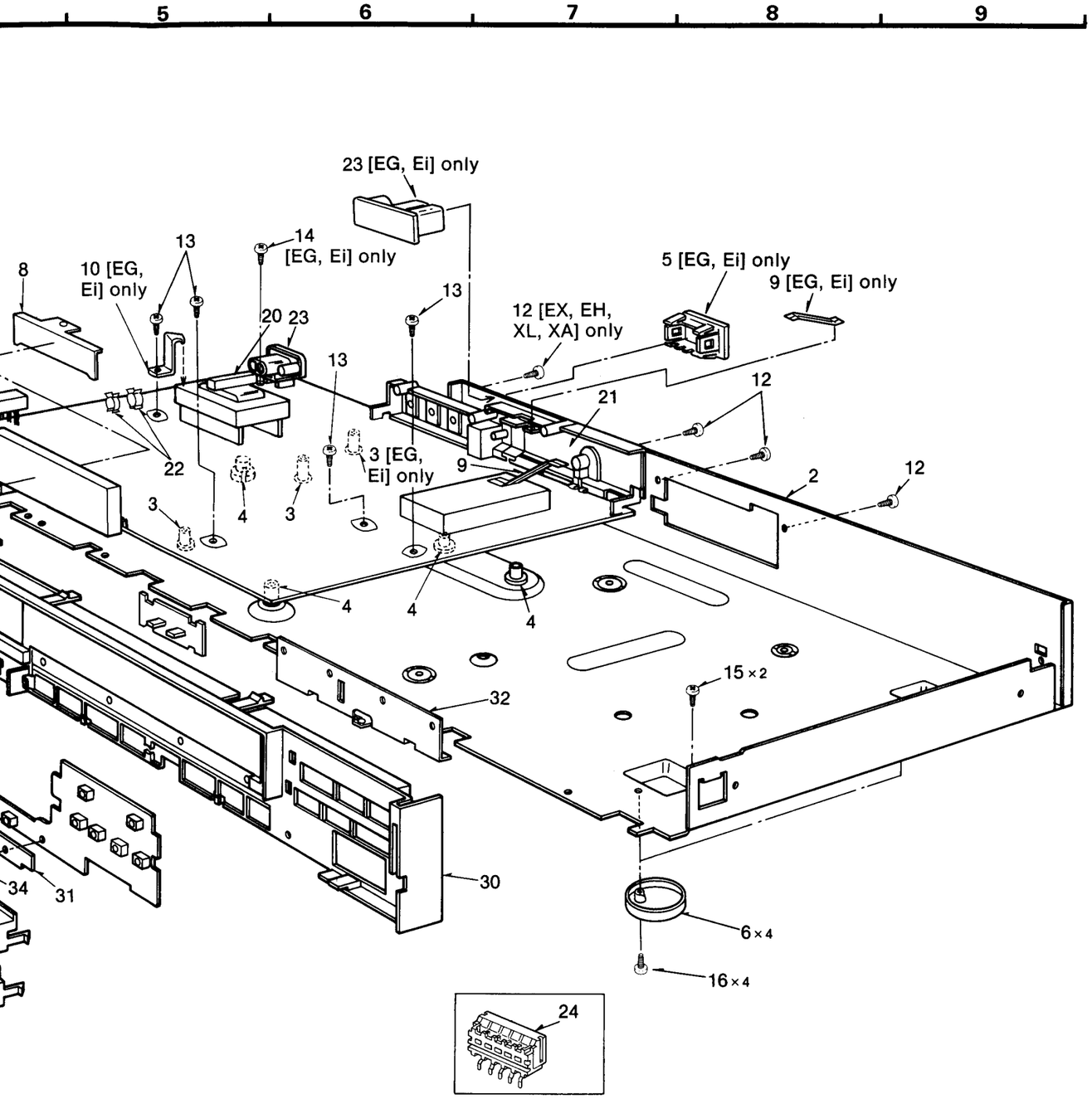


REPLACE

Notes : * Important saf
Components i
manufacturer
* Bracketed inc
Parts without

Ref. No.		Part No.
CABINET AND CHASSIS		
1	Ⓚ	SBC666-5
1	Ⓢ	SBC666
2 (EX)		SGPTG550-K
2 (EG)		SGPTG550-K
2 (EH)		SGPTG550-K
2 (Ei)		SGPTG550-K
2 (XL)		SGPTG550-K
2 (XA)		SGPTG550-K
3		SHE181
4		SHE185-1
5 (EG, Ei)		SJS9231A
6		SKL316
7		SGX7988
8		SUW3119
9		SUS803
10 (EG, Ei)		SUS772
11		XTB3+6FFZ
12		XTBS3+8JFZ
13		XTBS3+16F1
14 (EG, Ei)		XTBS3+20F1
15		XTW3+8TFR
16		XTW3+8T
17		SHR415
18	Ⓚ	SKC1710K99
18	Ⓢ	SKC1710S98
19	Ⓚ	SNE2129-3
19	Ⓢ	SNE2129-2
20		SHG1639

Ref. No.		Part No.
PACKING MATERIAL		
P1 (EX, EH, EG) (Ei, XA)	Ⓚ	SPG6420
P1 (XL)	Ⓚ	SPG6421
P1 (EX, EH, EG) (Ei, XA)	Ⓢ	SPG6422
P1 (XL)	Ⓢ	SPG6423
P2 (XL)		SPS4550-1
P2 (EX, EH, EG) (Ei, XA)		SPS4550-7
P3 (EX, EH, EG) (Ei, XA)		SPS4551-4
P3 (XL)		SPS4551-4
P4		SPS4552
P5 (XL)		SPS4672
P6	Ⓚ	SPP735
P6	Ⓢ	SPP697
P7		XZB24X40C0



■ REPLACEMENT PARTS LIST

Notes : * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Ref. No.		Part No.	Description
CABINET AND CHASSIS			
1	Ⓚ	SBC686-5	BUTTON, POWER
1	Ⓢ	SBC686	BUTTON, POWER
2		SGPTG550-KE	REAR PANEL
(EX)			
2		SGPTG550-KG	REAR PANEL
(EG)			
2		SGPTG550-KH	REAR PANEL
(EH)			
2		SGPTG550-KI	REAR PANEL
(EI)			
2		SGPTG550-KL	REAR PANEL
(XL)			
2		SGPTG550-KX	REAR PANEL
(XA)			
3		SHE181	HOLDER
4		SHE185-1	SPACER
5		SJS9231A	AC INLET COVER
(EG, EI)			
6		SKL316	FOOT
7		SGX7988	ORNAMENT
8		SUW3119	BRACKET, FL
9		SUS803	GROUND PLATE
10		SUS772	GROUND BRACKET
(EG, EI)			
11		XTB3+6FFZ	SCREW
12		XTBS3+8JFZ1	SCREW
13		XTBS3+16F1	SCREW
14		XTBS3+20F1	SCREW
(EG, EI)			
15		XTW3+8TFR	SCREW
16		XTW3+8T	SCREW
17		SHR415	LOCK PIN
18	Ⓚ	SKC1710K99	CABINET
18	Ⓢ	SKC1710S98	CABINET
19	Ⓚ	SNE2129-3	SCREW
19	Ⓢ	SNE2129-2	SCREW
20		SHG1639	RUBBER PARTS
21		SJF8615NP	TERMINAL BOARD
(EX, EH, EG)			
(EI)			
21		SJF8714NP	TERMINAL BOARD
(XA, XL)			
22	⚠	SJT390	FUSE HOLDER
23	⚠	SJS9231-1B	AC INLET
(EG, EI)			
23	⚠	SJS9236	AC INLET
(EX, EH, XA)			
(XL)			
24		SJT30340LX-V	CONNECTOR(3P)
24		SJT30440LX-V	CONNECTOR(4P)
24		SJT31143-V	CONNECTOR(11P)
25	Ⓚ	SBC809	BUTTON, TUNING
25	Ⓢ	SBC809-1	BUTTON, TUNING
26	Ⓚ	SBC726D	BUTTON, PRESET
26	Ⓢ	SBC726-1D	BUTTON, PRESET
27	Ⓚ	SBC810	BUTTON, FANCTION
27	Ⓢ	SBC810-1	BUTTON, FANCTION
28	Ⓚ	SBC811A	BUTTON, BAND SELECTOR
28	Ⓢ	SBC811-1A	BUTTON, BAND SELECTOR
29	Ⓚ	SGWTG550-KE	PANEL
29	Ⓢ	SGWTG550-SE	PANEL
29-1	Ⓚ	SGU446-12	FILTER
29-1	Ⓢ	SGU446-13	FILTER
30	Ⓚ	SGXTG550-KE	ORNAMENT
30	Ⓢ	SGXTG550-SE	GRILLE ASS'Y
31	Ⓚ	SGX7733	ORNAMENT
31	Ⓢ	SGX7731-1	ORNAMENT
32		SUW3002	BRACKET
33		SUW3011	BRACKET
34		XTB3+10G	SCREW
35		XTB3+12JFZ	SCREW
36		SHE181	HOLDER
(EG, EI)			
37		XTBS3+8JFZ1	SCREW
(EX, EH, XA)			
(XL)			

Ref. No.		Part No.	Description
PACKING MATERIAL			
P1	Ⓚ	SPG6420	PACKING CASE
(EX, EH, EG)			
(EI, XA)			
P1	Ⓚ	SPG6421	PACKING CASE
(XL)			
P1	Ⓢ	SPG6422	PACKING CASE
(EX, EH, EG)			
(EI, XA)			
P1	Ⓢ	SPG6423	PACKING CASE
(XL)			
P2		SPS4550-1	PAD(FRONT)
(XL)			
P2		SPS4550-7	PAD(FRONT)
(EX, EH, EG)			
(EI, XA)			
P3		SPS4551-4	PAD(BACK)
(EX, EH, EG)			
(EI, XA)			
P3		SPS4551-4	PAD(BACK)
(XL)			
P4		SPS4552	PAD(ACCESSORY)
P5		SPS4672	PAD(UPPER)
(XL)			
P6	Ⓚ	SPP735	PROTECTION COVER
P6	Ⓢ	SPP697	PROTECTION BAG
P7		XZB24X40C04	POLYETHYLENE COVER
ACCESSORIES			
A1	⚠	SFDAC05E03	POWER CORD
(EX, EH, EG)			
(EI)			
A1	⚠	SJA163	POWER CORD
(XL)			
A1	⚠	SJA168	POWER CORD
(XA)			
A2		SJP2249-1	OUTPUT CORD
A3	⚠	RJP120ZBS-H	AC PLUG ADAPTOR
(XA)			
A4		SSA269M	FM ANTENNA
(XA, XL)			
A4		SSA270M	FM ANTENNA
(EX, EH, EG)			
(EI)			
A5		SQF13266	INSTRUCTION BOOK
(EX, EH)			
A5		SQF13267	INSTRUCTION BOOK
(EG)			
A5		SQF13268	INSTRUCTION BOOK
(EI)			
A5		SQF13269	INSTRUCTION BOOK
(XA)			
A5		SQF13270	INSTRUCTION BOOK
(XL)			
A6		SPB1162T	AM LOOP ANTENNA

Ref. No.	Part No.	Description
INTEGRATED CIRCUITS		
IC101	AN278	I.C, BUFFER AMP
IC102	AN7274NS	I.C, FM IF/AM CONV
IC301	AN7472S	I.C, FM MPX
IC302	AN6554F	I.C, CLASS AA AMP
IC901	LM7001	I.C, PLL FREQ SYNTE
IC902	M50941-421SP	I.C, MICRO COMPUTER
TRANSISTORS		
Q101	2SC2786M	TRANSISTOR
Q102	2SA1309A-R	TRANSISTOR
Q103	2SA1309A-R	TRANSISTOR
Q104	2SC3311A-Q	TRANSISTOR
Q201	2SA1309A-R	TRANSISTOR
Q301	2SD1450TTA	TRANSISTOR
Q302	2SD1450TTA	TRANSISTOR
Q303	2SA1309A-R	TRANSISTOR
Q304	2SA1309A-R	TRANSISTOR
Q401	2SC3311A-Q	TRANSISTOR
Q402	2SC3311A-Q	TRANSISTOR
Q403	2SC3311A-Q	TRANSISTOR
Q701	2SC3940AQSTA	TRANSISTOR
Q702	2SD592ANCQ	TRANSISTOR
Q703	2SA1309A-R	TRANSISTOR
Q704	2SA1309A-R	TRANSISTOR
Q901	2SC1310EFG	TRANSISTOR
Q902	2SC1310EFG	TRANSISTOR
Q903	2SA1309A-R	TRANSISTOR
Q904	DTC144A	TRANSISTOR
Q905	2SC3311A-Q	TRANSISTOR
DIODES		
D101	MA165	DIODE
D102	MA165	DIODE
D103	MA165	DIODE
D104	MA165	DIODE
D201	SVC342LMTP	DIODE
D202	MA165	DIODE
D203	MA165	DIODE
D204	MA165	DIODE
D301	MA4082	DIODE
D302	MA165	DIODE
D401	LN446YP	L.E.D
D402	LN846RP-C	DIODE
D701 ⚠	SVD1SR35200A	DIODE
D702 ⚠	SVD1SR35200A	DIODE
D703	MA165	DIODE
D704	MA165	DIODE
D705	MA4140-M	DIODE
D706	MA4062M	DIODE
D707	MA4051-M	DIODE
D901	MA165	DIODE
D902	MA165	DIODE
D904 (XA)	MA165	DIODE
D905	MA165	DIODE
D906	MA165	DIODE
D907	MA165	DIODE
D908	MA165	DIODE
D909	MA165	DIODE
D910	MA4082	DIODE
D911	MA165	DIODE
D912	MA165	DIODE
D913	MA165	DIODE
D914	MA165	DIODE
D915	MA165	DIODE
D916	MA165	DIODE
D917	MA165	DIODE
D918	MA165	DIODE
D919	MA165	DIODE
D920	MA165	DIODE
D921	MA165	DIODE

Ref. No.	Part No.	Description
D922	MA165	DIODE
D923	MA165	DIODE
D924	MA165	DIODE
D925	MA165	DIODE
D926	MA165	DIODE
D927	MA165	DIODE
D928	MA165	DIODE
D929	MA165	DIODE
D930	MA4062M	DIODE
VARIABLE RESISTORS		
VR101	EVND4AA00B15	V.R, STRENGTH LEVEL ADJ
VR301	EVND4AA00B15	V.R, SEPARATION ADJ
VR303 (EX, EH, XA) (XL)	EVND4AA00B55	V.R, 38KHZ CANCEL CIRCUI
VARIABLE CAPACITORS		
CT201	SVCTZ03T110F	TRIMMER
THERMISTORS AND VARISTORS		
TH101	ERTD2ZHL332S	THERMISTOR
TH102	ERTD2ZHL332S	THERMISTOR
COILS AND TRANSFORMERS		
L202	SLA2B1-1M	ANTENNA COIL
L203	SLO2B7-M	OSCILLATOR COIL
L301 (EG, EI)	SLM1B1-P	MPX COIL
L303 (EG, EI)	SLM5B2-1P	MPX COIL
L304 (EG, EI)	SLM5B2-1P	MPX COIL
L305	RLQZPR47KT-Y	CHOKE COIL
L306	RLQZPR47KT-Y	CHOKE COIL
L307	RLQZP101KT-Y	COIL
L701 ⚠	SLQZ650MH49	CHOKE COIL
L901	RLQZP101KT-Y	COIL
L902	RLQZPR47KT-Y	CHOKE COIL
L903	RLQZP101KT-Y	COIL
L904	RLQZPR47KT-Y	CHOKE COIL
T101	SLI4B520-Z	I.F. TRANSFORMER
T102	SLI4B521-Z	I.F. TRANSFORMER
T201	SLI2B104-M	I.F. TRANSFORMER
T701 ⚠ (EX, EH, EG) (EI)	SLT5K259-K	POWER TRANSFORMER
T701 ⚠ (XL)	SLT5K260-K	POWER TRANSFORMER
T701 ⚠ (XA)	SLT5K261-K	POWER TRANSFORMER
FILTERS		
CF101	SVFE107MZ2-A	CERAMIC FILTER
CF101	SVFE107MZ2-B	CERAMIC FILTER
CF101	SVFE107MZ2-C	CERAMIC FILTER
CF101	SVFE107MZ2-D	CERAMIC FILTER
CF102	SVFE107MX2-A	CERAMIC FILTER
CF102	SVFE107MX2-B	CERAMIC FILTER
CF102	SVFE107MX2-C	CERAMIC FILTER
CF102	SVFE107MX2-D	CERAMIC FILTER
CF103	SVFE107MZ2-A	CERAMIC FILTER
CF103	SVFE107MZ2-B	CERAMIC FILTER
CF103	SVFE107MZ2-C	CERAMIC FILTER
CF103	SVFE107MZ2-D	CERAMIC FILTER
CF104	SVFE107MZ2-A	CERAMIC FILTER
CF104	SVFE107MZ2-B	CERAMIC FILTER
CF104	SVFE107MZ2-C	CERAMIC FILTER
CF104	SVFE107MZ2-D	CERAMIC FILTER
CF201	SVFSFZ450F7L	CERAMIC FILTER
OSCILLATORS		
X901	SVQ49U722-S	CRYSTAL OSCILLATOR
X902	SVQ49U402-S	CRYSTAL OSCILLATOR

Ref. No.	Part No.	Description
DISPLAYS		
FL	SAD6MT117GK	DISPLAY TUBE
FRONT PACKS		
FE	SNVFE407G29	FM FRONT-END PACK
FUSES		
F1 ⚠	XBA2C04TB0	FUSE, T0.4A250V
SWITCHES		
S701 ⚠	SSH1214	SW, POWER
S702 ⚠ (XA)	SSR187-1	SW, VOLTAGE SELECTOR
S901	SSG13	SW, CH1
S902	SSG13	SW, CH2
S903	SSG13	SW, CH3
S904	SSG13	SW, CH4
S905	SSG13	SW, CH5
S906	SSG13	SW, CH6
S907	SSG13	SW, CH7
S908	SSG13	SW, CH8
S909	SSG13	SW, CH9
S910	SSG13	SW, CH0
S911	SSG13	SW, FM
S912	SSG13	SW, AM
S914	SSG13	SW, SIGNAL
S915	SSG13	SW, IF BAND
S916	SSG13	SW, DOWN
S917	SSG13	SW, UP(CH)
S918	SSG13	SW, MODE(CH)
S919	SSG13	SW, DOWN(FREQ)
S920	SSG13	SW, UP(FREQ)
S921	SSG13	SW, MEMORY
RELAYS		
RL201	SFDYG5A237P	RELAY

■ RESISTORS & CAPACITORS

Notes : * Important safety notice :
Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
* Bracketed Indications in Ref. No. columns specify the area. (Refer to the first page for area.)
Parts without these indications can be used for all areas.

Numbering System For Resistors

Example:

ERD	25	F	J	102
Type	Wattage (1/4W)	Shape	Tolerance	Value (1KΩ)
ERX	2	AN	J	471
Type	Wattage (2W)	Shape	Tolerance	Value (470Ω)

Numbering System For Capacitor

Example:

ECKD	1H	102	Z	F
Type	Voltage (50V)	Value (0.001μF)	Tolerance	Unique
ECEA	50	M		330
Type	Voltage (50V)	Characteristics		Value (33μF)

● Capacitance values is in microfarads (μF) unless specified otherwise, P = Pico-farads (pF) F = Farads (F).
● Resistance values is in ohms (Ω), unless specified otherwise, 1K = 1,000Ω, 1M = 1,000kΩ

Resistor Type		Wattage		Tolerance
ERD	: Carbon	10 : 1/8W	12 : 1/2W	J : ±5%
ERG	: Metal Oxide	14 : 1/4W	25 : 1/4W	F : ±1%
ERQ	: Fuse Type Metal	1A : 1W	18 : 1/8W	G : ±2%
ERX	: Metal Film	S2 : 1/4W	S1 : 1/2W	J : ±5%
ERD L	: Carbon (chip)	2F : 1/4W	50 : 1/2W	K : ±10%
ERO K	: Metal Film (chip)	2A : 2W	3A : 3W	M : ±20%
ERC	: Solid	6G : 1/10W	8G : 1/8W	
ERF	: Incombustible Box-Shaped			
ERM	: Wire-Wound			
RRJ	: Chip Resistor			
ERJ	: Chip Resistor			

Capacitor Type		Voltage		Tolerance
ECE	: Electrolytic	0J : 6.3V	1A : 10V	K : ±10%
ECCD	: Ceramic	1C : 16V	1E : 25V	M : ±20%
ECKD	: Ceramic Capacitor	1H : 50V	1V : 35V	Z : +80 % −20
ECQM	: Polyester	50 : 50V	05 : 50V	
ECQP	: Polypropylene	2H : 500V	2A : 100V	J : ±5%
ECG	: Ceramic	1 : 100V	1J : 63V	G : ±2%
ECEA N	: Non Polar Electrolytic	KC : 400V AC		F : ±1%
QCU	: Ceramic (Chip Type)	KC : 125V AC (UL)		C : ±0.25pF
ECUX	: Ceramic (Chip Type)			D : ±0.5pF
ECF	: Semiconductor			
EECW-	: Liquid electrolyte double layer capacitor			

Ref. No.	Part No.	Value.
RESISTORS(VALUE,WATTAGE)		
R1	ERDS2TJ104	100K 1/4
R2	ERDS2TJ273	27K 1/4
R101	ERDS2TJ102	1K 1/4
R102	ERDS2TJ272	2.7K 1/4
R103	ERDS2TJ331	330 1/4
R104	ERDS2TJ331	330 1/4
R105	ERDS2TJ272	2.7K 1/4
R106	ERDS2TJ392	3.9K 1/4
R107	ERDS2TJ221	220 1/4
R108	ERDS2TJ104	100K 1/4
R109	ERDS2TJ101	100 1/4
R110	ERDS2TJ822	8.2K 1/4
R111	ERDS2TJ684	680K 1/4
R112	ERDS2TJ333	33K 1/4
R113	ERDS2TJ182	1.8K 1/4
R114 (EX, EH, XA) (XL)	ERDS2TJ101	100 1/4
R114 (EG, EI)	ERDS2TJ822	8.2K 1/4
R115	ERDS2TJ682	6.8K 1/4
R116	ERDS2TJ103	10K 1/4
R117	ERDS2TJ682	6.8K 1/4
R118	ERDS2TJ392	3.9K 1/4
R119	ERDS2TJ102	1K 1/4
R120	ERDS2TJ331	330 1/4
R121	ERDS2TJ102	1K 1/4
R122	ERDS2TJ104	100K 1/4
R123	ERDS2TJ473	47K 1/4
R124	ERDS2TJ473	47K 1/4
R125	ERDS2TJ332	3.3K 1/4
R126	ERDS2TJ101	100 1/4
R127	ERDS2TJ101	100 1/4
R201	ERDS2TJ473	47K 1/4
R202	ERDS2TJ822	8.2K 1/4
R203	ERDS2TJ104	100K 1/4
R204	ERDS2TJ102	1K 1/4
R205	ERDS2TJ222	2.2K 1/4
R206	ERDS2TJ473	47K 1/4
R207	ERDS2TJ473	47K 1/4
R208	ERDS2TJ124	120K 1/4
R209	ERDS2TJ274	270K 1/4
R210	ERDS2TJ222	2.2K 1/4
R211	ERDS2TJ101	100 1/4
R212	ERDS2TJ473	47K 1/4
R213	ERDS2TJ273	27K 1/4
R214	ERDS2TJ473	47K 1/4
R215	ERDS2TJ101	100 1/4
R301 (EG, EI)	ERDS2TJ682	6.8K 1/4
R301 (EX, EH, XL) (XA)	ERDS2TJ683	68K 1/4
R302 (EG, EI)	ERDS2TJ123	12K 1/4
R302 (EX, EH, XL) (XA)	ERDS2TJ393	39K 1/4
R303	ERDS2TJ334	330K 1/4
R304 (EG, EI)	ERDS2TJ272	2.7K 1/4
R305	ERDS2TJ104	100K 1/4
R306	ERDS2TJ104	100K 1/4
R307	ERDS2TJ274	270K 1/4
R308	ERDS2TJ274	270K 1/4
R309	ERDS2TJ274	270K 1/4
R310	ERDS2TJ102	1K 1/4
R311	ERDS2TKF1502	15K 1/4
R312	ERDS2TJ393	39K 1/4
R315	ERDS2TJ332	3.3K 1/4
R316	ERDS2TJ332	3.3K 1/4
R317	ERDS2TJ223	22K 1/4
R318	ERDS2TJ223	22K 1/4
R319	ERDS2TJ101	100 1/4
R320	ERDS2TJ101	100 1/4
R321	ERDS2TJ331	330 1/4
R322	ERDS2TJ331	330 1/4
R323	ERDS2TJ332	3.3K 1/4
R324	ERDS2TJ332	3.3K 1/4
R325	ERDS2TJ102	1K 1/4
R326	ERDS2TJ102	1K 1/4
R327	ERDS2TJ332	3.3K 1/4
R328	ERDS2TJ332	3.3K 1/4
R329 (EX, EH, XL) (XA)	ERDS2TJ104	100K 1/4
R329 (EG, EI)	ERDS2TJ153	15K 1/4
R330 (EX, EH, XL) (XA)	ERDS2TJ104	100K 1/4
R330 (EG, EI)	ERDS2TJ153	15K 1/4
R331	ERDS2TJ333	33K 1/4
R332	ERDS2TJ102	1K 1/4
R333	ERDS2TJ392	3.9K 1/4
R334	ERDS2TJ561	560 1/4
R335 (EG, EI)	ERDS2TJ392	3.9K 1/4
R336 (EG, EI)	ERDS2TJ274	270K 1/4
R337	ERDS2TJ123	12K 1/4
R338	ERDS2TJ274	270K 1/4
R339	ERDS2TJ473	47K 1/4
R340	ERDS2TJ333	33K 1/4
R401	ERDS2TJ223	22K 1/4
R402	ERDS2TJ104	100K 1/4
R403	ERDS2TJ331	330 1/4
R404	ERDS2TJ561	560 1/4
R409	ERDS2TJ331	330 1/4
R410	ERDS2TJ682	6.8K 1/4
R701	ERDS2TJ102	1K 1/4
R702	ERDS2TJ221	220 1/4
R703	ERDS2TJ222	2.2K 1/4
R704	ERDS2TJ101	100 1/4
R705	ERDS2TJ101	100 1/4
R706	ERDS2TJ101	100 1/4
R707	ERDS2TJ473	47K 1/4
R708	ERDS2TJ103	10K 1/4
R709	ERDS2TJ103	10K 1/4
R901	ERDS2TJ102	1K 1/4
R902	ERDS2TJ273	27K 1/4
R903	ERDS2TJ682	6.8K 1/4
R904	ERDS2TJ561	560 1/4

Ref. No.	Part No.	Value.
R905	ERDS2TJ123	12K 1/4
R906	ERDS2TJ102	1K 1/4
R908	ERDS2TJ392	3.9K 1/4
R912	ERDS2TJ561	560 1/4
R925	ERDS2TJ473	47K 1/4
R926	ERDS2TJ123	12K 1/4
R927	ERDS2TJ102	1K 1/4
R929	ERDS2TJ103	10K 1/4
R930	ERDS2TJ273	27K 1/4
R931	ERDS2TJ103	10K 1/4
R932	ERDS2TJ103	10K 1/4
R933	ERDS2TJ104	100K 1/4
R934	ERDS2TJ104	100K 1/4
R935	ERDS2TJ104	100K 1/4
R936	ERDS2TJ104	100K 1/4
R937	ERDS2TJ104	100K 1/4
R938	ERDS2TJ102	1K 1/4
R939	ERDS2TJ105	1M 1/4
CAPACITORS(VALUE,VOLTAGE)		
C1	ECEA1VK3R3	3.3 35
C3	ECKD1H103PF	0.01 50
C4	ECEA1CKS100	10 16
C101	ECKD1H103PF	0.01 50
C102	ECKD1H103PF	0.01 50
C103	ECKD1H103PF	0.01 50
C104	ECKD1H103PF	0.01 50
C105	ECQM1H223JZ	0.022 50
C106	ECEA0JU471	470 6.3
C107	ECQM1H102JZ	0.001 50
C108	RCBS1H180JCY	18P 50
C109	ECQM1H102JZ	0.001 50
C110	ECKD1H103PF	0.01 50
C111	ECKD1H103PF	0.01 50
C112	ECCD1H070CC	7P 50
C113	ECQM1H223JZ	0.022 50
C114	ECEA1AU101	100 10
C115	ECFTD104KXL	0.1 25
C116	ECEA1AU101	100 10
C117	ECEA1HKR22	0.22 50
C118	RCBC1H101KBY	100P 50
C120	ECKD1H103PF	0.01 50
C121	ECKD1H473ZF	0.047 50
C122	ECKD1H103PF	0.01 50
C123	ECKD1H103PF	0.01 50
C124	ECKD1H103PF	0.01 50
C125	ECKD1H103PF	0.01 50
C126	ECKD1H103PF	0.01 50
C201 ⚠	ECKD1H223PF	0.022 50
C202	RCBS1H180JCY	18P 50
C203	ECQP1471JZ	470P 125
C204 ⚠	ECKD1H223PF	0.022 50
C205	ECKD1H103PF	0.01 50
C206	ECCD1H080CC	8P 50
C207	RCBC1H680JLY	68P 50
C208	ECKD1H103PF	0.01 50
C209	ECKD1H103PF	0.01 50
C210	ECEA0JK330	33 6.3
C211	ECKD1H103PF	0.01 50
C212	ECEA1HKR47	0.47 50
C213	ECEA0JK330	33 6.3
C214 ⚠	ECKD1H223PF	0.022 50
C215	ECFTD183KXL	0.018 25
C216	ECKD1H103PF	0.01 50
C301	ECQM1H332JZ	0.0033 50
C302	ECKD1H103PF	0.01 50
C303	ECEA1AU101	100 10
C304	ECFTD104KXL	0.1 25
C305 (EG, EI)	ECQM1H102JZ	0.001 50
C306	ECEA1CKS100	10 16
C307	ECQB1H153JZ	0.015 50
C308	ECQB1H153JZ	0.015 50
C309	ECEA1HKR22	0.22 50
C310	ECEA1HKR47	0.47 50
C311	ECEA1HKR22	0.22 50
C312 ⚠	ECKD1H223PF	0.022 50
C313	ECQP2A391GZ	390P 100
C315	ECEA1VK3R3	3.3 35
C316	ECEA1VK3R3	3.3 35
C317 (EG, EI)	ECFTD272KXL	0.0027 25
C318 (EG, EI)	ECFTD272KXL	0.0027 25
C319	ECEA1VK3R3	3.3 35
C320	ECKD1H103PF	0.01 50
C321	ECEA1CKS100	10 16
C402	ECBT1H102KB5	0.001 50
C701	ECKD2H102ZF	0.001 500
C702	ECKD1H103PF	0.01 50
C703	ECKD2H102ZF	0.001 500
C704	ECKD2H102ZF	0.001 500
C705	ECEA1EU102	1000 25
C706	ECEA1CU222	2200 16
C707	ECEA1CU221	220 16
C708	ECEA1VU101	100 35
C709	ECEA1VK100B	10 35
C710	ECKD1H103PF	0.01 50
C711	ECKD1H103PF	0.01 50
C712	ECEA1VK3R3	3.3 35
C713	ECEA1VU101	100 35
C714	ECKD1H103PF	0.01 50
C715	ECKD2H102ZF	0.001 500
C716	ECKD2H102ZF	0.001 500
C717	ECKD2H102ZF	0.001 500
C718	ECKD2H102ZF	0.001 500
C719	ECEA1CKS100	10 16
C720	ECFTD104KXL	0.1 25
C901	ECEA0JU471	470 6.3
C902	ECBT1H102KB5	0.001 50
C903	ECCD1H150KC	15P 50
C904	ECCD1H150KC	15P 50
C905	ECKD1H103PF	0.01 50
C906	ECEA25M4R7R	4.7 25
C907	ECEA1HKR47	0.47 50
C908	ECKD1H103PF	0.01 50
C909	ECKD1H103PF	0.01 50
C910	ECKD1H103PF	0.01 50
C912	ECCT1H470KC	47P 50
C913	ECCT1H470KC	47P 50
C914	ECKD1H103PF	0.01 50
C915	ECEA0JS102	1000 6.3
C916	ECEA0JU222	2200 6.3
C917	ECKD1H103PF	0.01 50
C918	ECEA1CKS100	10 16
C919	ECEA1VK3R3	3.3 35
C920	ECKD1H103PF	0.01 50
C921	ECEA1AU101	100 10
C922	RCBC1H101KBY	100P 50
C923	RCBC1H101KBY	100P 50
C924	RCBC1H101KBY	100P 50
C925	RCBC1H101KBY	100P 50
C926	RCBC1H101KBY	100P 50
C927	RCBC1H101KBY	100P 50

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Tuner

ST-G550

DEUTSCH

DEUTSCH

■ MESSUNGEN UND EINSTELL METHODEN

■ AM/FM

Einstellungen der Bedienelemente und zu verwendende Geräte.

- MW und UKW Meßsender (MW und UKW Nebsender)
- Stereo-Modulator
- Verzerrungs-Analystator
- Elektronische Wechselstrom-und Gleichstrom-Voltmeter (EVM)
- Keramischer Kondensator (200pF)
- Oszilloskop
- Frequenzzähler
- Drosselspule (100µH)
- Widerstand (100KΩ)

Anmerkung: Für **T201** (AM ZFT), **L301** (L.P.F.), **L303** und **L304** (L.P.F.), werdeven justiert Ersatzteil geliefert. Dien Kern dieses Teils daher nicht drehen.

MW-HF-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Stellen Sie die Einheit auf "**MW**" Betrieb.
3. Radio und Signalgenerator auf **612kHz** einstellen.
4. **L203** so justieren, daß die im Signalzustand gemessene Spannung **1.0V**.
5. **L202** auf maximale Ausgangsleistung adgleichen.
6. Radio und Signalgenerator auf **1503kHz** einstellen.
7. **CT201** auf maximale Ausgangsleistung abgleichen.
8. Die Schritte 3~7 wiederholen.

Anmerkung:
Der Antenneneingang-Signalpegel muß so niedrig wie möglich und frei von automatischer werstärkungsregelung (AGC) sein.

UKW-MONO-VERZERRUNGS-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Stellen Sie die Einheit auf "**FM (UKW)**" Betrieb.
3. Die Radiofrequenzanzeige und den Messender auf **100.10MHz** einstellen.
4. Den Kern von **T101** so justieren, daß die im Signalzustand gemessene Spannung **0mV (0±10mV)** im 300mV-Bereich beträgt.
5. **T102** so justieren, daß der Verzerrungsfaktor des linken Kanals minimal wird.
6. Schritte 4 und 5 einige Male wiederholen.
7. Versichern Sie sich, daß die Verzerrungsfaktoren von Kanal L und Kanal R annähernd gleich sind und auf ein Minimum gehalten sind.

Anmerkung:
Für die Justierung ist ein Schraubendreher aus Kunststoff zu verwenden.

UKW-STEREO-VERZERRUNGS-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Stellen Sie die Einheit auf "**FM (UKW)**" Betrieb.
3. Die Radiofrequenzanzeige und den Messender auf **100.10MHz** einstellen.
4. **T1** so justieren, daß der Verzerrungsfaktor des linken Kanals minimal wird.
5. Versichern Sie sich, daß die Verzerrungsfaktoren von Kanal L und Kanal R annähernd gleich sind und auf ein Minimum gehalten sind.

Anmerkung:
1. Für die Justierung ist ein Schraubendreher aus Kunststoff zu verwenden.
2. **T1** sollte nicht mehr als 1/4 Drehung (90 Grad) nach einer Seite gedreht werden.

TRENNUNGS-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Stellen Sie die Einheit auf "**FM und IF normal**" Betrieb.
3. Die Radiofrequenzanzeige und den Messender auf **100,10MHz** einstellen.
4. **VR301** so justieren, daß der R-Ausgang minimal ist, wenn der Stereomodulator im L-Betriebszustand (Linker Kanal moduliert) ist.

38kHz-AUSBLENDKREISES-JUSTIERUNG

1. Der Testaufbau ist in der Abbildung gezeigt.
2. Stellen Sie die Einheit auf "**FM**" Betrieb.
3. Die Radiofrequenzanzeige und den Messender auf **100.10MHz** einstellen.
4. **VR303** auf minimal Ausgangsleistung abgleichen.

UKW-SIGNALSTÄRKEPEGELS-JUSTIERUNG

1. Für den Anschluß des Prüfgerätes siehe die Abbildung.
2. Das Gerät auf "**FM und IF normal**" stellen.
3. Das Hochfrequenz-Anzeigegerät und den Signalgenerator auf **100,10MHz** stellen.
4. Durch Drücken der UKW-Signaltaste das Flüssigkristalldisplay von "frequency" auf "dB" umschalten.
5. **VR101** so einstellen, daß **54dB** angezeigt wird. "**54dB**" wird auf dem Flüssigkristalldisplay angezeigt.
6. Die Schritte 4, 5 wiederholen.

D

FRANCAIS

■ MEAURAGES ET REGLAGES

■ A.M./M.F.

Positionnements des commandes et équipement utilisé

- Générateur de signaux AM et FM (AM et FM- SG)
- Modulateur stéréophonique
- Analyseur de distorsion
- Oscilloscope
- Compteur de fréquence
- Bobine d'amortissement d'arrêt (100μH)
- Résistance (100kΩ)
- Condensateur céramique (200pF)
- Voltmètre électronique à C.A. et C.C. (EVM).

Nota: Pour **T201** (A.M.) F.I., **L301** (L.P.F.), **L303** et **L304** (L.P.F.), des éléments réglés sont fournis. Aussi, ne pas tourner les noyaux de ces pièces.

REGLAGE DE A.M.-H.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur le mode "**MW**".
3. Régler le cadran radio et le générateur de signaux sur **612kHz.**
4. Ajuster **L203** de telle sorte que la tension mesurée sur le mode de signaux soit de **1.0V.**
5. Régler **L202** pour une sortie maximale.
6. Régler le cadran radio et le générateur de signaux sur **1503kHz.**
7. Régler **CT201** pour une sortie maximale.
8. Répéter les étapes 3~7.

Nota:
Le niveau d'entrée d'antenne doit être aussi bas que possible étant libéré de commande automatique de gain.

REGLAGE DE DISTORSION MONOPHONIQUE M.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur le mode "**FM**".
3. Régler le réglage de l'affichage de radiofréquence et du générateur de signaux sur **100.10MHz.**
4. Ajuster le noyau de **T101** de telle sorte que la tension mesurée sur le mode de signaux soit de **0mV (0±10mV)** dans une plage de 300mV.
5. Ajuster **T102** de telle que le facteur de sistorsion du canal de gauche soit minimisé.
6. Répéter les étapes 4 et 5 quelques fois.
7. S'assurer que les facteurs de distorsion du canal de gauche et du canal droite soient sensiblement les mêmes et au minimum.

Nota:
Le tournevis de réglage utilisé devra être fait en résines.

REGLAGE DE DISTORTION STEREO M.F.

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur le mode "**FM**".
3. Ajuster le réglage de l'affichage de radiofréquence et du générateur de signaux sur **100.10MHz.**
4. Ajuster **T1** de telle que le facteur de sistorsion du canal de gauche soit minimisé.
5. S'assurer que les facteurs de distorsion du canal de gauche et du canal droite soient sensiblement les mêmes et au minimum.

Nota:
1. Le tournevis de réglage utilisé devra être fait en résines.
2. **T1** ne doit pas être tourné de plus de 90° (1/4 de tour) dans un sens comme dans l'autre.

REGLAGE DE SEPARATION

1. Le raccordement de l'équipement d'essai est montré sur l'illustration.
2. Régler l'appareil sur le mode "**FM et IF normal**".
3. Ajuster le réglage de l'affichage de radioféquence et du générateur de signaux sur **100,10MHz.**
4. Ajuster **VR301** de telle sorte que la sortie de droite soite minimisée lorsque le modulateur stéréo est sur le mode "**G**". (modulation de canal de gauche.)

REGLAGE DU CIRCUIT DE SUPPRESSION 38kHz

1. Le raccordment de l'équipement d'essai est montré sur la figure.
2. Régler l'appareil sur le mode "**FM**".
3. Régler le cadran radio et le générateur de signaux sur **100.10MHz.**
4. Ajuster **VR303** pour une sortie minimum.

REGLAGE DU NIVEAU DU SIGNAL FM

1. Le raccordement des appareils de mesure est indiqué sur la figure.
2. Placer l'appareil en mode "**FM et IF normal**".
3. Régler le générateur et le compteur sur **100,10MHz.**
4. Changer l'indication de l'affichage à cristaux liquides de "fréquence" à "dB" en appuyant sur le bouton FM.
5. Régler **VR101** de manière que l'indication "**54dB**" soit indiquée sur l'affichage.
6. Répéter les opérations 4, 5.

D

ESPAÑOL

■ MEDICIONES Y AJUSTES

■ AM/FM

Posiciones de control y equipo usado.

- Generador de señales de AM y FM (AM y FM- SG)
- Voltimetro electrónico de CA y CC (EVM)
- Analizador de distorsiones
- Osciloscopio
- Frecuencimetro
- Frecuencimetro
- Bobina de choque (100μH)
- Resistor (100kΩ)
- Condensador ceràmico (200pF)

Nota: Para **T201** (MW-IFT), **L301** (L.P.F), **L303** y **L304** (L.P.F), son suministradas piezas ajustadas. Por lo tanto, no gire los nécleos de estas piezas.

AJUSTE DE MW-RF

1. La conexión del equipo de pruebas se muestra en la figura.
2. Poner la unidad en modalidad de "**AM**".
3. Poner la presentación de la radio y el generador de señales en **612kHz**.
4. Ajustar **L203** de manera que el voltaje medido en modalidad de señal sea **1.0V**.
5. Ajustar **L202** para salida màxima.
6. Poner la presentación de la radio y el generador de señales en **1503kHz**.
7. Ajustar **CT201** para salida màxima.
8. Repita los pasos 3. al 7.

Nota:
El nivel de entrada de antena ha de ser lo màs bajo posible estando libre de AGC (control automàtico de ganancia).

AJUSTE DE DISTORSION MONO FM

1. La conexión del equipo de pruebas se muestra en la figura.
2. Poner la unidad en modalidad de "**FM**".
3. Poner la puesta da la presentación de radiofrecuencia y generador de señales a **100,10MHz**.
4. Ajustar el núcleo de **T101** de manera que el voltaje medido en modalidad de señal sea **0mV (0±10mV)**.
5. Ajustar **T102** de manera que el factor de distorsión de CH-I se minimice.
6. Repetir los pasos 4 y 5 algunas veces.
7. Asegurarse de que los factores de distorsión de CH-I y CH-D sean casi los mismos y los minimos.

Nota:
El destornillador de ajuste usado debe estar hecho de resina.

AJUSTE DE DISTORSION ESTEREO FM

1. La conexión del equipo de pruebas se muestra en la figura.
2. Poner la unidad en modalidad de "**FM**".
3. Poner la puesta da la presentación de radiofrecuencia y generador de señales a **100,10MHz**.
4. Ajustar **T1** de manera que el factor de distorsión de CH-I se minimice.
5. Asegurarse de que los factores de distorsión de CH-I y CH-D sean casi los mismos y los minimos.

Nota:
1. El destornillador de ajuste usado debe estar hecho de resina.
2. **T1** debe girarse como máximo 1/4 de vuelta (90 grados) en cada sentido.

AJUSTE DE SEPARACION

1. La conexión del equipo pruebas se muestra en la figura.
2. Poner la unidad en modalidad de "**FM y IF normal**".
3. Poner la puesta de la presentación de radiofrecuencia y generador de señales a **100,10MHz**.
4. Ajustar **VR301** de manera que la salida de D quede minimizada cuando el modulador de estéreo esté en la modalidad "I". (modulación de CH-I.)

AJUSTE DE CIRCUITO DE CANCELACION, 38kHz

1. La conexión del equipo de pruebas se muestra en la figura.
2. Poner la unidad en modalidad de "**FM**".
3. Poner la puesta da la presentación de radiofrecuencia y generador de señales a **100,10MHz**.
4. Ajustar **VR303** para salida minimos.

AJUSTE DE LA INTENSIDAD DE LA SEÃL DE FM

1. La conexión del equipo de prueba se muestra en la figura.
2. Ponga la unidad en la modalidad, "**FM y IF normal**".
3. Ponga el visualizador de radiofrecuencia y el generador de señales en **100,10MHz**.
4. Cambie el visualizador de cristal liquido de "frecuencia" a "dB" pulsando el botón de la señal FM.
5. Ajuste **VR101** de modo que se indique **54dB**. En el visualizador de cristal liquido se indica "**54dB**".
6. Repita los pasos: 4, 5.

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